IN THE CLAIMS

Please amend the claims as follows.

1. (Previously Presented) A method for converting an input signal at an input sample rate to one of a plurality of differing intended output sample rates, the method comprising:

receiving, at the input sample rate, a plurality of data points, associated with the input signal;

operating on said plurality of data points to associate said input signal with a predetermined set of parameters, with said set of parameters including a first transition band having an image corresponding thereto; and

for said plurality of data points, controllably converting said input sample rate to any one of said plurality of differing intended output sample rates for any output data sample in response to a variation in an intended rational sample rate conversion ratio

by converting said input sample rate associated with said input signal to any one of the plurality of differing intended output sample rates by interpolation with an interpolator implementing an interpolation equation and having associated therewith a second transition band,

with the width associated with said second transition band being a function of a spectral separation of said first transition band and said image, and wherein an output signal is produced having a sequence of data samples approximating the input signal.

2. (Original) The method recited in claim 1 wherein varying said sample rate includes producing each data sample associated with said second signal by convolving a predetermined finite number N of data points with an equal number of coefficients, with N being greater than two.

3. (Original) The method recited in claim 2 wherein coefficients vary as a function of the temporal spacing between the output point and the corresponding input points.

4. (Previously Presented) The method as recited in claim 1 wherein varying said input sample rate increases said input sample rate.

5. (Previously Presented) The method as recited in claim 1 wherein varying said input sample rate decreases said input sample rate.

6. (Original) The method as recited in claim 1 wherein operating on said plurality of data points includes up-sampling said plurality of data points by a factor of two.

7. (Original) The method as recited in claim 1 wherein operating on said plurality of data points includes filtering said plurality of data points with a half-band filter.

8. (Original) The method as recited in claim 1 wherein operating on said plurality of data points includes decimating said plurality of data points with a half-band decimator.

9. (Previously Presented) The method as recited in claim 6 further including decimating a plurality of data points output by said interpolator with a half-band decimator, with varying said input sample rate occurring after receiving said plurality of data points and before decimating said plurality of data points.

10. (Previously Presented) The method as recited in claim 1 wherein operating on said plurality of data points to associate said input signal includes filtering the same with a finite impulse response filter.

11. (Original) The method as recited in claim 1 wherein operating on said plurality of data points to associate said signal includes filtering the same with an infinite impulse response filter.

12. (Previously Presented) A method for converting a digital audio signal at an initial sample rate to a different intended sample rate, the method comprising:

receiving a plurality of data points, associated with an audio signal, at the initial sample rate;

halfband filtering said plurality of data points with a halfband filter to provide intermediate data points, said halfband filter having a first transition band with an image corresponding thereto; and

interpolating the intermediate data points with an interpolator utilizing an interpolation equation and having independently programmable parameters and a second transition band, with a width associated with the second transition band being a function of the spectral separation of said first transition band and said image, and wherein the different sample rate is provided by interpolating at least a subset of the intermediate data points based on the independently programmable parameters, and wherein said different sample rate is controllably variable at any output data sample by interpolation.

13. (Original) The method as recited in claim 12 wherein:

said halfband filtering is done in conjunction with upsampling said plurality of data points; and

said interpolating follows said upsampling and halfband filtering.

14. (Original) The method as recited in claim 12 wherein:

said halfband filtering is done, without upsampling, on said plurality of datapoints; and

said interpolating follows said halfband filtering.

15. (Previously Presented) The method as recited in claim 12 wherein:

additional halfband filtering follows said interpolating.

16. (Previously Presented) The method as recited in claim 12 wherein:

said halfband filtering is done in conjunction with upsampling said plurality of data points;

said interpolating follows said halfband filtering; and

halfband filtering and decimating follow said interpolating.

17. (Currently Amended) A computer-readable storage medium embodying computer executable instructions for converting an input signal at an input sample rate to one of a plurality of differing intended output sample rates, the instructions comprising:

code for receiving a plurality of data points, associated with the input signal, at the input sample rate;

code for operating on said plurality of data points to associate said input signal with a predetermined set of parameters, with said set of parameters including a first transition band having a first width;

for said plurality of data points, code for controllably converting said input sample rate to any one of said plurality of differing output sample rates for any output data sample in response to a variation in an intended rational sample rate conversion ratio by converting said input sample rate associated with said signal to any one of the plurality of differing intended output sample rates by interpolating a subset of data points of said plurality of data points with an interpolator implementing an interpolation equation and having associated therewith a second transition band, with the width associated with said second transition band being a function of a spectral separation of said first transition band and said image; and

code for producing an output signal having a sequence of data samples approximating the input signal.

18. (Previously Presented) The computer-readable storage medium as recited in claim 17 wherein code for operating on said plurality of data points includes code for up-sampling said plurality of data points by a factor of two.

19. (Previously Presented) The computer-readable storage medium as recited in claim 17 wherein code for operating on said plurality of data points includes code for filtering said plurality of data points with a half-band filter.

20. (Previously Presented) The computer-readable storage medium as recited in claim 17 wherein code for operating on said plurality of data points includes code for decimating said plurality of data points with a half-band decimator.

21. (Previously Presented) The computer-readable storage medium as recited in claim 18 further including code for decimating said plurality of data points with a half-band decimator.

22. (Previously Presented) The computer-readable storage medium as recited in claim 17 wherein code for operating on said plurality of data points to associate said signal includes code for filtering said data points with a filter selected from the set of filters consisting essentially of a finite impulse response filter and a infinite impulse response filter.

23. (Currently Amended) A computer-readable storage medium embodying computer executable instructions for converting a digital audio signal at an initial sample rate to a different intended sample rate, the instructions comprising:

code for receiving a plurality of data points, associated with an audio signal, at an initial sample rate;

code for halfband filtering said plurality of data points with a halfband filter to provide intermediate data points, said halfband filter having a first transition band with an image corresponding thereto;

code for interpolating the intermediate data points with an interpolator utilizing an interpolation equation and having independently programmable parameters and a second transition band, with a width associated with the second transition band being a function of the spectral separation of said first transition band and said image, and wherein the different sample rate is provided by interpolating at least a subset of the intermediate data points based on the independently programmable parameters, and wherein said different sample rate is controllably varied at any output data sample by interpolation; and

code for producing an output signal at the different sample rate.

24. (Previously Presented) The computer-readable storage medium as recited in claim 23 wherein:

said code for halfband filtering is executable in conjunction with code for upsampling said plurality of data points; and

said code for interpolating is executable following said upsampling and halfband filtering code.

25. (Previously Presented) The computer-readable storage medium as recited in claim 23 wherein:

said code for halfband filtering is executable, without upsampling code, on said plurality of datapoints; and

said code for interpolating is executable following said halfband filtering code.

26. (Previously Presented) The computer-readable storage medium as recited in claim 23 wherein:

code for additional halfband filtering is executable following said code for interpolating.

27. (Previously Presented) The computer-readable storage medium as recited in claim 23 wherein:

said code for halfband filtering is executable in conjunction with code for upsampling said plurality of data points;

said code for interpolating is executable following said code for halfband filtering; and further comprising:

code for halfband filtering and decimating executable follows said code for interpolating.

28. (Original) The method of claims 1 or 12 wherein said interpolator is an FIR Nth order sum of products interpolator with linear interpolation of coefficients.

29. (Previously Presented) The computer-readable storage medium of claims 17 or 23 wherein said interpolator is an FIR Nth order sum of products interpolator with linear interpolation of coefficients.

30. (Original) The method of claims 1 or 12 wherein said interpolator has a transition band beginning adjacent the top of a passband and ending adjacent the bottom of a passband image.

31. (Previously Presented) The computer-readable storage mediumof claims 17 or 23 wherein said interpolator has a transition band beginning adjacent the top of a passband and ending adjacent the bottom of a passband image.

32. (Original) The method of claims 7, 8, 9 or 12 wherein said halfband filter is an IIR filter composed of first order allpass blocks.

33. (Previously Presented) The computer-readable storage medium of claims 19 or 23 wherein said halfband filter is an IIR filter composed of first order allpass blocks.